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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Joern Borgert

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
595 MINER ROAD
CLEVELAND, OH 44143

EXAMINER

WHITTINGTON, KENNETH

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,771	Applicant(s) BORGERT ET AL.	
	Examiner KENNETH J. WHITTINGTON	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 and 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment filed January 29, 2008 and the remarks thereto have been entered and considered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the six differential coils forming the edges of a tetrahedron as recited in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of

the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Weed et al. (US4317078), hereinafter Weed. Regarding claim 1, Weed discloses a tracking method for tracking a sensor in a capture range in a field generated by a field generator, the method comprising the steps of:

(a) generating a field by means of the field generator for defining the capture range (See FIGS. 1-13, item 12);

(b) identifying a region of interest including the sensor within the capture range (See FIGS. 1-13, sensor item 14, see col. 8, lines 48-68, note x-axis is identified);

(c) narrowing the capture range by narrowing the field by means of the field generator (Note definition of narrow as

defined by Applicant at paragraph 0006 of the present application that includes adjustment of a direction of the magnetic field. See col. 8, lines 48-68, generator moved along x-axis with sensor stationary, thus direction of magnetic field with respect to sensor is adjusted and thus narrowed as contemplated by Applicant);

(d) iteratively repeating steps (a) to (c) (See col. 8, lines 48-68, note generator 14 is repeatedly moved to positions along the x-axis until sufficient to determine x_0).

Regarding claim 2, Weed discloses the field generator is a magnetic field generator and emits a magnetic field, wherein the magnetic field generator comprises at least one coil, further comprising the step of: adjusting a position of the at least one coil in the field generator for narrowing the capture range such that at least one of a size and shape of the capture range is reduced (See FIGS. 1-13, item 12 and see col. 8, lines 48-68, note position of generator is adjusted. Note also that since Weed discloses the movement of one coil as recited in this claim, it discloses the properties recited and contemplated in view of this movement in this claim).

Regarding claim 3, Weed discloses the step of displacing the field generator for narrowing the capture range (Note again definition of narrow as defined by Applicant at paragraph 0006

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of the present application that includes adjustment of a direction of the magnetic field. See col. 8, lines 48-68, generator moved along x-axis with sensor stationary, thus direction of magnetic field with respect to sensor is adjusted and thus narrowed as contemplated in this claim).

Regarding claim 4, Weed discloses the field generator is a magnetic field generator and emits a magnetic field, wherein the magnetic field generator comprises at least one coil, further comprising the step of: adjusting an orientation of the at least one coil in the field generator for narrowing the capture range such that a location of the capture range is adjusted (See FIGS. 1-13, item 12 and see col. 8, lines 48-68, note movement of coil 12 changes the orientation of the coil 12 with respect to sensor 14, thus location is adjusted. See also col. 9, lines 1-25, note coil 12 is rotated and moved along y-axis).

Claims 1, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Acker (US5729129). Regarding claim 1, Acker discloses a tracking method for tracking a sensor in a capture range in a field generated by a field generator, the method comprising the steps of:

(a) generating a field by means of the field generator for defining the capture range (See Acker FIGS. 1-4, items 10, 10a, 10b, 10c);

(b) identifying a region of interest including the sensor within the capture range (See FIG. 1, item 50);

(c) narrowing the capture range by narrowing the field by means of the field generator (See FIG. 4 and col. 7, line 21 to col. 8, line 39, note the field strength of the coils 10, 10a, 10b and 10c is adjusted and hence their size or range is adjusted depending on the position of sensor and its output signal);

(d) iteratively repeating steps (a) to (c). (See FIG. 4, col. 7, line 21 to col. 8, line 39, note process is repeated as the sensor moves within the system).

Regarding claim 13, Acker discloses determining between steps (c) and (d) whether the accuracy and resolution provided within the capture range meets a predetermined threshold (See col. 7, line 21 to col. 8, line 39).

Regarding claim 14, Acker discloses improving a resolution with which a region of interest is identified as the capture range is narrowed (See col. 7, line 21 to col. 8, line 39).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Acker in view of Cannon et al. (US3768459), hereinafter Cannon. Regarding this claim, Acker teaches the features noted above with respect to claim 1 and further miniaturized induction coils for the sensor which is used a catheter (See Acker col. 5, lines 44-46), but not the relative dimensions of the coils or the use of a synthetic material coating. Cannon teaches coating sensor coils for use within a body with a synthetic material coating (See Cannon col. 5, lines 20-54). It would have been obvious at the time the invention was made to apply a synthetic material coating to the sensor coil catheter of Acker. One having ordinary skill in the art would do so to protect the coils in a way that does not interfere with the electromagnetic fields and protects the coils from contact with body fluids (See same portion of Cannon).

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Furthermore, Acker in view of Cannon to have the relative dimensions as recited in the claims would be obvious to one having ordinary skill in the art through routine experimentation because where the where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. *See Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 225 USPQ 232 (1984). It would have thus been obvious to one having ordinary skill in the to make the sensor of Acker in view of Cannon to have the recited dimensions because this combination otherwise teaches the structural features of the claim, Acker teaches its catheter sensor can be miniaturized and furthermore, one having ordinary skill in the art would make it any of a variety of sized depending on the particular application of the catheter.

Allowable Subject Matter

Claims 5-9 and 15-17 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 5-8 and 15-17, the prior art does not show or teach the field generator focusing, narrowing and centering the capture range on the region of interest as recited in the claim and in combination with the other features of the claims.

Regarding claim 9, the prior art does not show or teach narrowing and focusing the capture range as recited in the claim and in combination with the other features of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 10, the prior art does not show or teach the field generator being six differential coils forming a tetrahedron as recited in the claim and in combination with the other features of the claims.

Regarding claim 12, the prior art does not show or teach the field generator comprising two coils mounted for rotation relative to an axis and actuators therefor as recited in the claim and in combination with the other features of the claims.

Response to Arguments

Applicant's arguments filed January 29, 2008 with regard to claims 1-4 have been fully considered but they are not persuasive.

Regarding the rejection of claim 1 as being anticipated by Weed, Applicants' primary assertion is that Weed fails to disclose narrowing as intended by Applicants. Applicants then go into a discourse regarding the definition of narrowing provided in the specification at paragraph 0006, which states narrowing "to include any adjustment with respect to at least one of size, direction and orientation of the capture range to achieve an adjustment, shifting and/or moving of the capture range."

Using this definition provided by Applicants and noting it is written in "or" terms, the definition can be read such that narrowing includes "any adjustment with respect to ... direction of the capture range to achieve ... shifting ... of the capture range." This definition explicitly allows narrowing to include

adjusting the direction of the field to achieve a shifting of the capture range. Furthermore, this interpretation of the definition is fully supported by Applicants' claim 3, which notes the narrowing comprises "displacing" the field generator. Accordingly, in view of the specification and claims, any adjusting of the direction of the field generator, i.e., "displacing" to achieve a shift in the capture range is a narrowing as specifically defined by Applicants'.

As applied to the rejection, Weed discloses at col. 8, line 48 to col. 9, line 25, the field generator is moved or displaced along an axis and readings are repetitively taken (iteratively) multiple times. This displacement of the field generator meets the definition of narrowing of the field as specifically defined by Applicants' above and thus anticipates this feature as claimed.

Applicants' next assert that Weed is not involved in any iterative method "in the sense of claim 1". As noted above, Weed discloses generating a magnetic field, identifying a region of interest (where the coil is pointed either in the z-axis direction or 90 degrees rotated thereto) and narrowing the field by displacement and repeating this process multiple times over the x-axis and y-axis (See Weed col. 8, line 48 to col. 9, line

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25). Iterative simply means repeating, thus Weed discloses an iterative process.

Applicants finally assert that Acker as well does not disclose narrowing of the magnetic field as defined by Applicants. Acker discloses field generators for locating the position of the sensor wherein the field magnitudes are increased or decreased if it is determined the sensors is out of range (See Acker col. 7, line 20 to col. 8, line 39). As is known with magnetic fields, field magnitude changes inversely with distance from the source. Thus, if the magnitude of the field is reduced, the range of the magnetic field is reduced or narrowed. This is precisely what is disclosed by Acker. See also Acker col. 12, lines 26-40, which states the field strengths are narrowed to a pre-selected value for a particular sensor. Applying again Applicants' own definition of narrowing--i.e., to include any adjustment with respect to at least one of ... size of the capture range to achieve and adjustment ... of the capture range", Acker discloses reducing or increasing the capture range of the magnetic field, which adjusts the capture range and accordingly anticipates this features as claimed.

For the forgoing reasons, the rejections stand.

Conclusion

Applicant's amendment necessitated the new and amended grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH J. WHITTINGTON whose telephone number is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Kenneth J Whittington/
Examiner, Art Unit 2862

/Reena Aurora/
Primary Examiner, Art Unit
2862